DAB Evaluation Kit

Digital radio broadcasting is a relatively new radio technology, which supports a wide range of new media services. Audio, the primary service, is enhanced by many additional new digital services including Program Assisted Data, Electronic Program Guide, and Slide Show.

To support easy design-in of the DAB baseband processor ATR2740, Atmel® offer a comprehensive evaluation kit ATR2740-Dev-Kit1. Since the kit is a complete DAB radio with excellent performance, it helps to simplify software design activities. The system stack of Eureka-147-based digital radio (which includes DAB, DAB+, and T-DMB) provides the flexibility to implement a wide variety of services while providing a platform for the development of future services.

Atmel has over 30 year's experience designing digital radio solutions and offers a complete DAB solution including an RF front end and a DAB decoding baseband. The ATR2740 DAB baseband processor is a highly functional system-on-chip solution. Its flexibility enables the implementation of application-related tasks. This chipset forms the hardware basis for the DAB evaluation kit.

Evaluation Kit Overview

The DAB evaluation kit is a comprehensive tool, which enables users to familiarize themselves with the Eureka-147 family of digital radio standards. The evaluation kit provides detailed diagnostic information about the reception channel as well as detailed signaling information about the service received. A comfortable graphic user interface, installed on an external PC or laptop, enables efficient and easy use of the evaluation kit. In addition to the testing functions, the evaluation kit also operates as a standard DAB radio, providing high quality audio. The core of the DAB evaluation kit is a module using Atmel's DAB chipset, the ATR2740 base-band processor and the ATR2732 dual-band tuner device.

The DAB evaluation kit is perfectly suited for anyone interested in Eureka-147-based services as it provides a deeper look into the standard and extensive testing capabilities.

Evaluation Kit Content

- Complete DAB receiver including an automotive module (DAB module sample design ATR2740-Dev-Kit2) that operates worldwide with any DAB frequency in Band 3 and L-Band
- Cables for USART and USB Connection
- Magnet Foot Passive Antenna
- 12V DC Power Supply for the DAB Receiver
- Pair of Active Loudspeakers
- CD with Documentation and Software Package for PC Control GUI
- Carrying Case

Features and Functionality

Control of the evaluation kit receiver can be managed from the front panel. Four control buttons are available to to tune up and down, to auto-tune and store, and to select different services within a set. Four buttons are available to store preselections. The two-line LCD graphic display shows, by default, the operating frequency, DAB service name, and the ensemble name. Additional information such as signal indication can be displayed using the buttons.

Functions of the kit include:

- Frequency tune up/down
- Auto scan
- Ensemble search up/down
- Control select (USB/USART)
- Service select
- 4 x preset

Display options include:

- Service and ensemble name
- Frequency
- Sychronisation information
- Error rate (EFCR)
- Dynamic Lable
- Genre
- Date and time

Diagnostic information about reception condition, DAB-channel-related and audio-source-related information is available via the USART or USB Interface using the pc-installed software delivered with the evaluation kit. The receiver can also be directly controlled from pc-installed software, thus simplifying control of the various functions of this high-performance receiver.

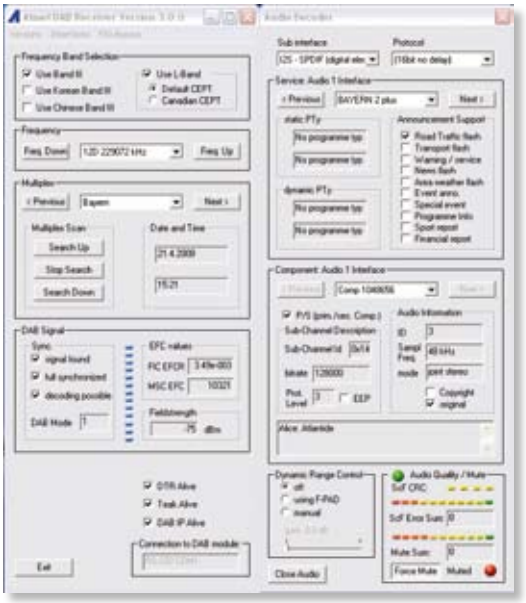
The following interfaces are available on the rear of the receiver:

- 1 USB
- 2 USARTs
- 1 Audio Output
- Antenna Input for Dual Band
- RDI Output to Add an External RDI Decoder

Evaluation Kit Uses

The evaluation kit enables users to:

- Learn more about the DAB system and reception
- Carry out a performance analysis and comparison
- Verify the robustness of the DAB reception with drive test even under very critical conditions
- Check the audio source information such as program assisted data or dynamic labels
- Stream out special selected data from the Evaluation kit to an external PC or laptop for further investigation
- Enjoy listening to DAB audio services



Performance

Parameter	VHF Band III Value	L-Band Value
Frequency Range	174–240 MHz	1.452–1.492 GHz
Sensitivity	–98 dBm	–98 dBm
Large-signal Behavior	15 dBm	2 dBm
Adjacent Channel Selectivity	37 dB	37 dB
Far-off Selectivity	50 dB	52 dB
Input Impedance	50 Ω	50 Ω
Image Frequency Rejection	68 dB	70 dB

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